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WHAT IS CLAIMED IS:

1. A method for the vitrification of biological materials, said method comprising the steps of:
  - (a) suspending the biological material in a cryoprotective equilibration medium, having a concentration of cryoprotectant(s) below that sufficient to protect against ice formation to the glass transition temperature of the cryoprotective equilibration medium;
  - (b) rinsing the equilibrated biological material with a vitrification solution, the vitrification medium having a concentration of cryoprotectant(s) sufficient to protect against ice formation to the glass transition temperature of the vitrification medium; and
  - (c) dropping the vitrification solution-rinsed biological material in microdroplets of vitrification solution onto a solid surface with good heat conductivity having been previously cooled down to about -150°C to about -180°C.
2. The method of claim 1 wherein the biological material is a cell.
3. The method of claim 1 wherein the biological material is an oocyte.
4. The method of claim 1 wherein the biological material is an embryo.
5. An improved method for cryopreserving biological material suspended in a vitrification solution, wherein the improvement comprises contacting microdroplets of the vitrification solution containing the biological material with a solid surface having a temperature of about -150°C to about -180°C, said surface having a good heat conductivity.
6. The method of claim 5 wherein the biological material is a cell.
7. The method of claim 5 wherein the biological material is an oocyte.

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- 1 16. A cell line developed from the embryo of claim 13.
- 1 17. A cell line developed from the fetus of claim 14.
- 1 18. A cell line developed from the animal of claim 15.
- Sub AG 1 19. An improved method for cryopreserving oocytes suspended in a vitrification  
2 solution, wherein the improvement comprises contacting microdroplets of the vitrification  
3 solution containing the oocytes with a solid surface having a temperature of about -150°C  
4 to about -180°C, said surface having a thermal conductivity 20°C of greater than about 10  
5 W/(m-k).
- 1 20. An oocyte vitrified by the method of claim 19.
- 1 21. An embryo developed from the oocyte of claim 20.
- 1 22. A fetus developed from the oocyte of claim 20.
- 1 23. An animal developed from the oocyte of claim 20.
- 1 24. A cell line developed from the embryo of claim 21.
- 1 25. A cell line developed from the fetus of claim 22.
- 1 26. A cell line developed from the animal of claim 23.
- 1 27. An improved method for the parthenogenetic development of vitrified oocytes  
2 cultured in a KSOM plus BSA culture system, the improvement comprising co-culturing  
3 with cumulus-cells.

Add A7 > Add C1 >

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